

Advancing Autonomous Operations Technologies for NASA Missions

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Abstract - This paper discusses the importance of implementing advanced autonomous technologies supporting operations of future NASA missions. The ability for crewed, uncrewed and even ground support systems to be capable of mission support without external interaction or control has become essential as space exploration moves further out into the solar system. The push to develop and utilize autonomous technologies for NASA mission operations stems in part from the need to reduce cost while improving and increasing capability and safety. This paper will provide examples of autonomous technologies currently in use at NASA and will identify opportunities to advance existing autonomous technologies that will enhance mission success by reducing cost, ameliorating inefficiencies, and mitigating catastrophic anomalies.